



## A FIVE - DAY NATIONAL WORK SHOP

On

### Mechanical and Tribological Behavior of Advanced Composites

21<sup>st</sup> January – 25<sup>th</sup> January, 2019

(Under Continuous Education Programs)  
Sponsored by TEQIP – III

On the eve of Diamond Jubilee Celebrations of NIT  
(REC), Warangal



**Convener**

**Prof. R. Narasimha Rao**

**Coordinators**

**Dr. Syed Ismail**

**Dr. G. Raghavendra**

**Dr. Satish Ben**

**Organized by**

**Mechanical Engineering Department**

**National Institute of Technology**

**Warangal – 506004**

**Telangana**

## INTRODUCTION

Most challenging problems in today's life are energy and health, and it provides an opportunity in scientific development and economic growth. Composites and Tribology are one of the fields that have emerged about a half-century ago in response to energy related problems. However, many of the problems still exist, like in the area of automotive and railway systems, power sector, mining and so on. Therefore, there is always a need for better and efficient materials for replacing conventional materials which may reduce weight ratio with enhanced mechanical and tribological properties. In industries, reliability of the components and production efficiency are essential factors which can be enhanced by proper study of Tribology. Hence, main objective of this workshop is to provide a unique opportunity to learn and discussing the fundamentals of Composites and Tribology, and the recent developments in different aspects of advanced composites.

The speakers will cover a detailed introduction about Composites, Tribology, Wear and Friction on materials, basics of Rotordynamics and Fault diagnosis.

## OBJECTIVES OF THE WORKSHOP

The main objective of the course is to impart the knowledge to researchers, teachers and field engineers in the current field of Composites and Tribology. The course will be useful for the researchers and teachers to teach and carrying out research in different aspects of Mechanical and Tribological applications of composites.

## WORKSHOP CONTENTS

- Introduction to Composites
- Introduction to Tribology
- Wear and Friction on MMC and PMC
- Micro and Macro Mechanics of FRP's
- Modes of Lubrication
- Nano- and Bio- Tribology
- Surface Texturing
- Fault Diagnosis
- Basics of Rotordynamics
- Conducting laboratory experiments to study the lubrication and wear behavior
- Hands-on experience to fabricate composites and study of its mechanical and wear characteristics

## HOW TO APPLY

Interested candidates can download brochure & registration form from our Institute website <http://www.nitw.ac.in>. The number of participants in the workshop is limited to 40. Candidates are advised to apply early to avoid disappointment. Application in the prescribed format duly sponsored by Head of the Institution along with the registration fee in the form of ONLINE Bank Transfer to Account Number: 37583198741 (A/C Name: TEQIP III Funds, SBI, NIT Warangal Branch, IFC Code: SBIN0020149) should reach the coordinator (Through E-mail or Post) on or before 06-01-2019. Only after receiving the proof of payment of registration fee from the participants through Email, they will be sent confirmation of their participation through E-mail immediately.

### REGISTRATION FEES

The registration fee is Rs. 2000/- for Faculty and Research Scholars and Rs. 5000/- for Industry participants. The fee shall include accommodation, breakfast, lunch and dinner. Registration fee for Internal Faculty/Research Scholars/Students is Rs.500/-.

### ACCOMMODATION & TRAVEL

Accommodation for outstation participants will be provided on request in the Institute Visitor's Block or International Students' Hostel. TA and DA will not be paid.

### RESOURCE PERSONS

Eminent faculty of the Mechanical Engineering department and Faculty from IITs, other NITs & Industry who have the expertise in these areas will be delivering lectures.

### ABOUT WARANGAL

Warangal is the second largest and smart city of the state of Telangana. It is situated at a distance of 140 km from the state capital Hyderabad (Nearest Airport). It is well connected by Rail (Kazipet Junction is two km away and Warangal Station is 12 km away) and by Road (NH 202). It is a seat of tourist attractions with a number of historical monuments like Thousand Pillars Temple, Warangal Fort, Bhadrakali Temple, Ramappa Temple and Laknavaram Lake located in a radius of 30 kms.

### ABOUT NIT WARANGAL

NIT Warangal, formerly known as Regional Engineering College was established in 1959. Over the years it has developed into a premier institute of higher learning and is ranked among the top technical education institutions in India. There are 14 Departments offering eight undergraduate and 31 post-graduate programmes

besides doctoral programmes. About 5000 students across the country and about 500 international students study on the campus. It is a fully residential campus sprawling over 250 acres with excellent infrastructure in the form of state of the art library, seminar halls, guest houses and laboratories. Now NIT Warangal is celebrating Diamond Jubilee (1959- 2019).

### ABOUT DEPARTMENT

The department of Mechanical Engineering offers an UG program, Seven PG programs and a Ph. D program as well. The department has experienced faculty and well-established laboratories. The department has liaison with reputed industries and R &D organizations like NIFTDC, BHEL, DMRL, DRDL etc. Presently the department is handling several R & D projects and consultancy works. The department has also been recognized as QIP centre for M. Tech and Ph. D.

### ADDRESS FOR COMMUNICATION

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### Coordinators, MTBAC

Mechanical Engineering Department  
National Institute of Technology  
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Mechanical Engineering Department

NIT Warangal – 506004 (TS)

### Registration Form

Name of the Participant \_\_\_\_\_

Gender \_\_\_\_\_ Qualification \_\_\_\_\_

Discipline \_\_\_\_\_

Designation \_\_\_\_\_

Mobile \_\_\_\_\_

Email \_\_\_\_\_

Accommodation Required: (Y / N) \_\_\_\_\_

ONLINE Bank Transfer Particulars:

- i) Amount: Rs.
- ii) Transaction No.:
- iii) Bank and Date:

### DECLARATION

The information provided is true to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the programme and shall attend the programme completely.

Place:

Date:

Signature of the applicant

**Recommended and Forwarded**

Signature of Head of Institution  
(With seal)